

# Designing a Basic Income Guarantee for Canada\*

Robin Boadway, Queen's University

<boadwayr@econ.queensu.ca>

Katherine Cuff, McMaster University

<cuffk@mcmaster.ca>

Kourtney Koebel, Queen's University

<14klk4@queensu.ca>

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## **Abstract**

Support for a basic income guarantee in Canada has been building in recent years partly in response to growing income inequality. Yet the form of such a guarantee has not been specified, and the complexity of setting up such a program cannot be underestimated given that federal, provincial, territorial and First Nations governments must be involved. Programs approximating income guarantees already exist for certain groups, especially the elderly, low-income families with children and, less successfully, the working poor. Minimum incomes are also provided to the long-term unemployed and the disabled through provincial social assistance programs, albeit with stigmatizing eligibility requirements and serious work disincentives. This paper studies the design, financing and implementation of a basic income guarantee program that covers all residents and builds on existing programs. Special emphasis is put on federal-provincial coordination issues. An illustrative simulation of the program using Statistics Canada's SPSD/M is presented.

# 1 Introduction

There is renewed interest in the idea of a basic income guarantee for Canada. This is partly driven by the growing inequality experienced here and in many other OECD countries and the inability of redistribution policies to address it (see Fortin et al, 2012 and Banting and Myles, 2013). At the bottom end of the income scale where much of the population relies on government transfers, welfare incomes have fallen dramatically in the past three decades and poverty rates have increased. For example, the welfare income of a single employable person in Ontario fell from \$12,500 in 1994 to \$8,500 in 2014 measured in 2004 dollars (Tweddle, Battle and Torjman, 2015). Compounding this is the increase in earnings volatility resulting from the stagnation of full-time jobs and the precariousness of employment in a changing world. Improvements in the lot of the least well-off are not in sight as technology displaces factory jobs and the forces of globalization result in a race to the bottom among both employers and governments. Moreover, there is increasing evidence of the self-reinforcing nature of poverty. Poverty leads to poor nutrition and health outcomes, impedes educational attainment, and prevents poor persons from participating in society and from improving opportunities for themselves and their families. Putting more money in the hands of the poor will increase their well-being and life chances, and make them less dependent in the future.

The idea of a basic income guarantee (BIG) is motivated by these considerations. It is more than an altruistic impulse, and includes an element of investment in the betterment of persons who are unable to achieve their potential and that of their children. However, a BIG is not in itself a panacea. It is a complement rather than replacement for other public programs such as employment creation, housing, education and healthcare. As such, the income security provided by a BIG is a necessary but not a sufficient condition for addressing the concerns of the disadvantaged. Our focus will be on reform of government transfer programs, leaving intact in-kind benefits, social services and regulations (e.g., minimum wage). The BIG we propose would replace most or all existing transfers delivered through the tax system, including all non-refundable and refundable tax credits. It would not replace social insurance programs such as employment insurance (EI), workers compensation or contributory public pensions (Canada and Quebec Pension Plans, CPP/QPP). Nonetheless, some harmonization of these programs with a BIG will be required to the extent that these programs serve in part to supplement the income of low-income persons.

Arguments for a BIG are not new to Canada. A form of BIG was proposed by the Special Senate Committee on Poverty (1971) and later by the Royal Commission on Canada's Economic Prospects (1985). A vocal proponent has been Segal (2008, 2009). Alternate BIG proposals have been studied empirically by various authors, most thoroughly by Hum and Simpson (2005) and Simpson and Stevens (2015). It has also been investigated by Young and Mulvale (2009) and less sympathetically by Lammam and MacIntyre (2015). These studies differ in terms of the assumed changes in the existing tax-transfer system they propose to finance the BIG and the subsequent level of guaranteed income. Recent summaries of the pros and cons of BIG may be found in Himelfarb and Hennessy (2016) and Macdonald (2016), and suggestions for the design of a basic income pilot are found in Forget, Marando, Surman and Crawford Urban (2016).

The Lammam-MacIntyre study treated BIG as a replacement for all programs aimed at serving the needs of low-income persons, including EI, CPP/QPP, and social services. The motivation was to investigate the administrative cost savings associated with delivering all existing programs for the poor through a single transfer system without enhancing their benefits. The outcome would resemble a negative income tax system along the lines originally proposed by Friedman, and would not address the shortcomings of existing programs in alleviating poverty and income volatility. Our analysis combines adequacy of income assistance with dismantling the burdensome administrative delivery of provincial social assistance programs. Social services would remain intact, and more wide-ranging reforms could address the administrative costs of delivering them.

In approaching the design of a BIG in the Canadian context, two broad issues must be addressed. The first is whether the BIG should be a universal basic income paid to all persons regardless of means as opposed to a more targeted BIG whose main objective is to ensure that no one falls below the chosen basic income level. European proponents of basic income opt for the universal version partly on philosophical grounds—basic income as a right to which all are entitled—and partly on grounds of political feasibility, political support will be fostered if all voters are entitled to basic income (Van Parijs, 1995). Atkinson (2015) has instead argued that to buy political support, basic income recipients should be required to make some social contribution, such as paid employment or self-employment, education, training or job search, care-giving or voluntary work. This idea, which Atkinson refers to as participation income, runs the risk of perpetuating the administrative costs and

stigmatization of the existing transfer system.

The argument against the universal approach is its cost. If all persons are to be cut a cheque of, say, \$20,000 per year, on average that would cost \$20,000 per person. Given that a significant proportion of the population are not taxpayers, the cost per taxpayer would be correspondingly greater than that. This would be diminished considerably if the basic income were taxable, but even then everyone would receive some amount. If the top marginal tax rate were 50%, the highest income earners would receive \$10,000 after tax. This would reduce the cost of a universal basic income transfer somewhat, but it would still be expensive and would entail considerable ‘churning’ of tax revenues (tax revenues being raised to make transfers to the persons who paid the taxes).<sup>1</sup> Once the principle of taxing universal basic income is admitted, designing a BIG as an income-tested scheme becomes an option.

The alternative to a universal basic income is to emphasize the guarantee of a basic income as its defining feature. According to this view, the design of a BIG should be based on finding the most efficient way of ensuring that no one’s income falls below the chosen basic income level.<sup>2</sup> An income-tested BIG could be administered most simply through the income tax system, either as a refundable tax credit like the Canada Child Benefit (CCB), the Working Income Tax Benefit (WITB) and the GST/HST Credit, or as a standalone transfer like the Old Age Security and Guaranteed Income Supplement (OAS/GIS) system. In either case, the income-tested transfer could be superimposed on the progressive income tax structure, but could have tax-back rates that differ from the latter as is the case with these other refundable tax credits or standalone transfer programs. Thus, all of the above current programs have tax-back rates that ensure that the transfer is phased out before high incomes are achieved. A BIG program would ideally incorporate all such transfers into a single system with a given basic income defined and tax-back rates based on individual or family income as desired. To the extent that taxpayers receive BIG, the implicit marginal tax rate would have to include both the income tax rate and the BIG tax-back rate.

A more ambitious program would fully harmonize a BIG with the income tax system so that a single tax rate schedule applies to the BIG and all other income combined. Such

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<sup>1</sup>Note that a classical negative income tax, or flat tax, is essentially of this form. All persons are entitled to a given lump-sum transfer, and all income earned is taxed away at some fixed tax rate.

<sup>2</sup>In public economics, a special version of this would be the maxi-min or Rawlsian optimal income tax, which is the income tax-transfer system that maximizes the well-being of the least well-off person and in which individual well-being can be indexed by income (Rawls, 1971).

a system would be as transparent as possible, and might be viewed as the end result of a transition from the current system to a mature income-tested BIG program. This unified tax-transfer system would have the property found in the optimal income tax literature that marginal tax rates would be relatively high at lower incomes and would fall with income at least over some range. (See, for example, Boadway and Jacquet (2008), who find that marginal tax rates fall for all incomes in the maximin case.) Presumably, any movement towards such a fully harmonized BIG would involve both winners and losers, and the identity of these specific groups could determine the political feasibility for such a move. The universal BIG has apparent political appeal given that everyone would receive it, but ultimately the universal BIG would have to be paid by someone.

The second broad issue to confront is the federal nature of Canada: the federal government, provinces, territories and First Nations all assume some responsibility for transfers to low-income persons. Roughly speaking, the federal government dominates transfers to the elderly through OAS/GIS and to children through CCB, while the provinces and territories make major transfers to the long-term unemployed and the disabled through their welfare systems. Both levels of government implement income-based refundable tax credits. The federal government has fiduciary responsibility for First Nations, and finances welfare systems that are delivered by that latter. Social assistance support also varies considerably among provinces and First Nation programs that are financed by the federal government. Some groups, such as low-income workers, receive relatively little in transfer support from any level of government. The result of this patchwork system is a relatively uneven level of support, where the elderly and low-income families with children fare somewhat better than those relying on provincial transfers, and the working poor receive limited support.

The relevant point is that neither the federal nor the provincial-territorial level of government is alone responsible for redistributive transfers. It is implicitly a shared responsibility, and appropriately so given that different redistributive norms are likely to apply in different provinces. A BIG that supplants the existing system of transfers must take account of the interest that both levels of government have in redistribution, as well as the special responsibility that the federal government has for First Nations. This complicates the form of an ideal BIG system, as well as the movement from the existing system to a BIG, especially given that the existing system falls far short of an adequate level of support for those with low incomes.

The challenge we address in this paper is how to design a BIG system that provides adequate levels of support with a minimum of stigmatization and conditionality, with a suitable balance between program cost and work incentives, and with a degree of differentiation across provinces that accommodates provincial preferences in a way that does not adversely affect provincial incentives or national objectives. Our scheme involves a two-stage transition from the current system of transfers, with the federal government taking the lead in the first stage and the provinces having the opportunity to harmonize their systems in the second stage. The analogue that informs our proposed scheme is the federal-provincial tax harmonization system that exists in similar forms for personal and corporate income taxes and the GST/HST. Given that these are bilateral agreements between the federal government and individual provinces, unanimous agreement is not required. Like the tax collection agreements, the design of a two-stage program must make it inviting for the provinces to join in and must pay attention to the implications of a federal-provincial BIG system for intergovernmental fiscal arrangements, such as the division of tax room, Equalization and the Canada Social Transfer.

Our discussion will focus on a BIG delivered by the federal government and the provinces. We omit discussion of the territories for simplicity, since they raise no special issue of substance. Providing a BIG to First Nations members does pose special challenges given the responsibility that the federal government bears for them. An acceptable BIG would involve the participation of First Nation governments even if the financing comes largely from the federal government. This is especially true if the BIG is to be administered through the tax system by the CRA. Including First Nation members in a national BIG would involve institutional issues that call for a separate study.

In what follows, we briefly review the arguments for an income-tested BIG. Next, we summarize the relevant features of the existing Canadian tax-transfer system and then outline our two-stage basic income guarantee proposal. Following that, we provide some illustrative examples of our basic income guarantee proposal, and finally we discuss further implementation issues of a BIG in Canada.

## 2 The Case for an Income-Tested BIG

Virtually all Canadian residents are eligible for some level of government support if their incomes are low enough. But the levels of support vary widely among individuals, and fall well short of various poverty benchmarks. Low-income seniors come closest to the benchmarks, and families are entitled to support on behalf of their children through the recent CCB that approximates what BIG advocates propose. Income of individuals in provincial social assistance programs are typically well below any poverty benchmark. In addition, the delivery of support to those who rely on provincial transfers has a number of negative features that can lead to stigmatization, dependency and adverse work incentives. In the following sections, we propose a two-stage policy approach to reforming the current Canadian transfer system to deliver an income-tested BIG program in the least intrusive way. First, it is worth recounting the case for a more generous and comprehensive BIG program under which no one's income falls below a basic minimum. That does not mean that all persons receive a basic income. Instead, basic income transfers are targeted to those that need them most, and fall off as income earned increases so that recipients retain some advantage from working.

Why should society guarantee a basic income unconditionally to all individuals regardless of their behaviour? Two classes of arguments can be made. The first draws on normative welfare economics and social choice theory, especially as it has been applied in optimal redistribution analysis. These tend to be relatively technical arguments. The second class consists of a number of policy-based considerations.

Standard optimal redistribution theory in public economics posits a benevolent government maximizing a social welfare function that aggregates the well-being or 'utility' of all persons. In the absence of redistribution, persons with greater skills or productivity—because they are so endowed or because they have acquired skills through education and socio-economic surroundings—will be better off (i.e., attain higher utilities). As long as the social welfare function exhibits aversion to utility inequality, partly because individual marginal utilities of income are decreasing,<sup>3</sup> redistribution will be from the better-off to the worse-off. Even if the social welfare function is utilitarian—the sum of utilities—redistribution will favour the least well-off. Typically, this will require the least well-off

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<sup>3</sup>With decreasing marginal utility in income, giving an additional dollar to a low-income person increases their utility by more than giving the additional dollar to a high-income person.

receiving a transfer: the least well-off will either not be working or if they are they will earn relatively little. In the extreme case where aversion to inequality is the highest, the social welfare function will be of the maxi-min sort (Rawls, 1971), so the welfare of the least well-off will be maximized.<sup>4</sup>

The social welfare approach supports redistribution to the less well-off, but does not lead one directly to a basic income guarantee. That is because income does not index individual utility or welfare. The latter includes, for example, leisure time. In the classical optimal income tax problem, utility is increasing in income, but if the objective of the Rawlsian government were to maximize the income of the least well-off, that would not be the same as maximizing the welfare of the least well-off because the value of leisure—or the cost of work—would not be given any weight (Kanbur, Keen and Tuomala, 1994). However, recent contributions to redistribution theory have questioned the relevance of the standard social welfare maximizing approach, and lend more direct support to a BIG.

The first contribution may be found in the equality of opportunity literature and is motivated by the fact that individuals have different preferences. Faced with identical circumstances, individuals may make quite different choices. They may differ in their saving behaviour or in their propensity to take risks, for example. For our purposes, they may differ in their preferences for leisure. Those who choose to work hard will have higher incomes at the expense of leisure than others. In these circumstances, incomes may no longer be perfectly correlated with well-being. Indeed, ranking persons by well-being is less clear-cut when preferences for leisure differ. The equality of opportunity approach attempts to resolve this issue by supposing that persons are to some extent responsible for their preferences, and differences in outcomes across persons arising because of differences in preferences should neither be penalized nor rewarded: the Principle of Responsibility. Persons should only be compensated for differences over which they have no control, such as their skills: the Principle of Compensation. It turns out that these two principles are in conflict and cannot both be satisfied, though we need not dwell on the reasons here. For our purposes, the point is that giving persons of identical skills equal opportunities or resources preserves the Principle of Responsibility. In practical terms, this suggests that in redistributing to the least skilled or productive, the amount of the transfer should not be contingent on how

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<sup>4</sup>It will not be feasible to redistribute so much that utilities are equalized. In the literature this is precluded by an equity-efficiency trade-off resulting from the inability of the government to identify persons by their skill. At best incomes can be observed, and these incomes can be affected by individuals' behaviour.

much the recipients choose to work. This would support an unconditional BIG program.

This argument has been taken further by Fleurbaey and Maniquet (2011). They also begin with the Principles of Responsibility and Compensation, but they suppose following the social choice literature (Arrow, 1951) that welfare can neither be measured nor compared across persons. Since the two principles cannot be satisfied at the same time, they propose variants that compromise one or the other principle. In one variant, the Principle of Compensation is assumed to be satisfied, while the Principle of Responsibility is weakened. Given the immeasurability of utility, they propose that the Principle of Compensation can be captured in a form of the Pigou-Dalton transfer principle: social outcomes are assumed to be improved if consumption differences are reduced between persons of different skills and the same preferences who supply the same amount of labour. The Restricted Principle of Responsibility requires that if persons differed only in preferences, the *laissez-faire* would be optimal. Using these two requirements combined with the Pareto principle, they show that the social ordering takes the maxi-min form in an index of utility based on resources required to get to each individual's indifference level.<sup>5</sup> All other persons, including less industrious persons with the lowest skills, achieve a higher utility index. This can be interpreted as a form of BIG, where the income guarantee is a virtual *laissez-faire* budget line.

These arguments for defining social orderings in terms of a measure of resources required to achieve existing levels of welfare (or indifference curves) is reminiscent of arguments for indexing individual well-being for tax purposes using comprehensive income (Haig-Simons-Musgrave). Comprehensive income was taken to be a measure of the ability to pay taxes, and the Carter Report recommended it as the income tax base. The case for a progressive rate structure was based partly on the doctrine of equal sacrifice (e.g. all individuals should be made equally worse off as a result of taxation, either proportionately or in absolute terms), and partly on the idea that a minimum amount of income was needed for non-discretionary spending so should be tax-favoured. Discretionary spending could be taxed at a higher rate (up to 50% according to Carter). The Carter Report was preoccupied by income taxes rather than transfers so did not broach the topic of a BIG. However, the notion of minimum

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<sup>5</sup>More precisely, each person's welfare is indexed by the slope of a ray through the origin that is tangential to their utility level, that is, a virtual *laissez-faire* skill level. According to this index of utility, the worst-off individuals are the most industrious ones with the lowest productivity. The optimal redistribution scheme transfers resources to them to maximize their utility index.

amount of individual spending being non-discretionary or necessary leads one immediately to the presumption that all individuals ought to receive at least the minimum necessary amount.

Compelling arguments for a universal BIG can be made on the basis of citizenship or human rights. Article 25(1) of the Universal Declaration of Human Rights proclaimed by the U.N. General Assembly in 1948 and signed by Canada states “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.” This can be interpreted as the right to a basic income.

Normative arguments reinforce that right. The enviable level of per capita output of goods and services produced by the Canadian economy is due in part to the skills, hard work and ingenuity of Canadian workers and entrepreneurs. However, that success is contingent on the quality of Canadian institutions, the sanctity of the legal system and the rule of law, the accumulated knowledge that current generations have inherited from the past and natural endowments of resources and amenities, all of which are part of the common heritage of all citizens. Those who earn large wages and salaries do so partly from their own effort, but partly from luck associated with living in the right place at the right time. Providing less fortunate persons with a BIG recognizes their share of the bounty that Canadian prosperity allows.<sup>6</sup>

A BIG can also be partly justified as an investment in human development. Higher incomes contribute to better nutrition, better health outcomes and better education, both for income recipients and for their children. Evidence from the 1974–79 Mincome guaranteed annual income experiment in Dauphin, Manitoba summarized by Forget (2011) confirms this. A BIG also gives persons the capability of participating fully in society and the human dignity that entails (Sen, 1985). Removing the anxiety about where the next meal or adequate clothing and housing will come from allows individuals to focus on longer term decisions. And, removing the stigmatization of the existing system can actually contribute to building social norms such that transfer recipients feel good about themselves and their potential to contribute to society, and therefore have more incentive to work, provided there

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<sup>6</sup>This is the motivation behind the universal transfer in Alaska based on natural resource revenues.

is some minimum reward for doing so.

These arguments have already been accepted for a segment of the population, specifically the elderly and low-income families with children. We investigate below how they might be extended to the entire population.

### **3 Basic Elements of Canada's Tax-Transfer System**

Our focus is on the design of a BIG in the Canadian federal context. A national BIG would include both federal and provincial components, and would replace the various transfer programs now provided by the two levels of government. Many of these programs are either delivered through the tax system or use taxable income to determine eligibility. Our proposal would rely even more on the income tax system, and is inspired by the Canadian system of tax harmonization. As such, it is useful to summarize the relevant features of the existing tax-transfer system. A key distinction between taxes and transfers is that whereas the income tax system is highly harmonized between the federal and provincial governments, the transfer system is more fragmented. The federal government and the provinces focus their transfer systems on different groups and there is relatively little coordination. Our BIG proposal aims to achieve a similar form of harmonization in the Canadian transfer system as exists in the tax system. We begin by summarizing the current federal and provincial transfer systems and then turn to tax harmonization.

#### **3.1 Federal and Provincial Income Transfers**

Diverse forms of income support are provided by governments in Canada to different types of residents. Virtually all low-income persons receive some support. However, levels of support are uneven and inadequate, and often poorly targeted. Some of the current income support programs are administratively complex and intrusive, and discourage some persons from escaping poverty.

Federal government transfers to low-income persons take two main forms. Persons aged 65 and over are eligible for OAS and GIS depending on their income. In 2016, the basic OAS is \$6,846 per year, is indexed and is taxable. Once annual net income reaches \$71,592, OAS is subject to a recovery tax of 15% so it falls to zero at an income of \$116,103. In addition to OAS, GIS is available to the lowest-income seniors and is non-taxable. The maximum

annual amount is \$9,283, and it falls with income until it reaches zero at \$17,304 (which reflects a tax-back rate of about 50%). Taken together, OAS and GIS offer a maximum annual amount of \$16,129 to a single senior with no other income.

OAS and GIS operate outside the income tax system, although they are integrated with it. The other forms of federal low-income transfers are income-tested refundable tax credits, which are integral to the tax system and administered by the CRA. These are of three main types. One is the CCB, which began in 2016 with the first Liberal government budget. It is a tax-free payment to families based the number and age of children, and is family-income tested. It can be supplemented by a child disability benefit as well as provincial or territorial benefits. In 2016–17 (since monthly payments are recalculated each July), the annual amount was \$6,400 for each child up to age 5 and \$5,400 per child aged 6 to 17. CCB is reduced when family net income including all transfer income exceeds \$30,000 and the tax-back rate varies with the number of children. With one child, the tax-back rate is 7% for family incomes between \$30,000 and \$65,000, and 3.2% above that, and corresponding tax-back rates are 13.5% and 5.7% for two children, 19% and 8% for three children, and 23% and 9.5% for four or more children. For families with one child, the CCB falls to zero only when family incomes reach over \$120,000, and similarly for more than one child.

The WITB is a refundable tax credit to low-income workers, and is intended partly to encourage labour force participation. It is available to workers aged 19 and above who earn a prescribed minimum each year. It can include a disability supplement, and can be varied by provinces. For single persons in most provinces, the annual WITB for 2015 is \$1,015 if working income is between \$7,060 and \$11,525. It is reduced when income exceeds \$11,525 and falls to zero when working income reaches \$18,292. The maximum amount for families is \$1,844 if family working income is between \$10,376 and \$15,915. It falls with family income beyond that and becomes zero when family working income reaches \$28,209. The maximum WITB disability supplement is \$508. These WITB amounts are all relatively modest.

The GST credit is meant to compensate low-income persons for GST paid on their consumption purchases. For provinces who have harmonized their sales taxes into the HST, an HST credit applies that can vary by province. The GST credit varies by family size and family net income, and is indexed annually for inflation. For a single person with no children the maximum amount is \$421 per year on incomes starting at \$20,000, and falls

to zero at \$46,000. (The credit is less than \$421 if income is less than \$20,000.) With two children, the maximum GST credit is \$842 starting at zero income and falls to zero at \$54,000. Amounts are slightly higher with two adults and more children. As can be seen, the GST credit is modest in size. It is only intended to compensate for GST paid, and not to redistribute income.

Since these refundable tax credits are administered by CRA as part of the income tax system, individuals must file an income tax return to be eligible. Amounts are based on the previous years income so cannot take account of changes in family income in the meantime. The provinces also offer some refundable tax credits, but like the GST credit these are relatively small.

Provincial transfers consist mainly of social assistance (welfare payments) to the long-term unemployed and transfers to the disabled. The amounts vary widely across provinces as documented by Tweddle, Battle and Torjman (2015). In 2014, welfare for single employable persons was \$11,035 in Newfoundland & Labrador, and varied in other provinces from \$6,811 in New Brunswick to \$8,995 in Saskatchewan. For two-parent, two-child families, the highest amount was \$27,240 in Prince Edward Island, and elsewhere was between \$21,770 in New Brunswick to \$25,886 in Ontario. Single disabled persons received \$14,094 in Ontario, and between \$9,425 in New Brunswick and \$12,375 in Quebec. These amounts are not indexed for inflation, and have been trending downwards since the early 1990s.

While federal transfers are either delivered through the income tax system or in the case of OAS/GIS coordinated with it, provincial welfare and disability transfers are delivered by provincial social assistance administrators. Whereas federal programs are based on self-assessment (apart from disability supplements, which requires a doctors approval), eligibility for welfare and disability involves application for support, screening for eligibility and some ongoing monitoring. Recipients are restricted in the amount of assets they can own, and their ability to earn income is severely restricted and subject to varying tax-back rates, typically quite high. Welfare recipients are expected to be available to work and to accept job offers. Eligibility for welfare and disability also entails eligibility for various social services, such as housing assistance, pharmaceuticals, public transit subsidies and counselling.<sup>7</sup> The consequence is a system that can be stigmatizing, and that discourages work and saving.

Both the federal government and the provinces operate contributory social insurance

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<sup>7</sup>The Drummond Report (2012) noted that in Ontario, social assistance comprised about 51% of social program spending in 2010–11 with the remainder consisting of various social services (Chart 8.1).

programs. The Canada Pension Plan (CPP) and employment insurance (EI) are at the federal level. Both of these are financed by payroll contributions subject to upper limits. CPP benefits are related to past contributions, while EI benefits are based on earnings conditional on eligibility requirements based on weeks of contribution. Their purpose is to provide insurance against involuntary unemployment in the case of EI or longevity in the case of the CPP. The provinces have mandatory worker compensation schemes to insure workers against job loss due to injury or accidents on the job. Quebec opts out of CPP and requires workers to contribute to the Quebec Pension Plan (QPP). Although there is some implicit redistribution in these social insurance schemes (in the sense that they are not actuarially fair), their main purpose is not redistribution. Since EI and CPP/QPP are taxable, they interact with a BIG that is conditioned on net income. In what follows we assume these social insurance programs remain in place when a BIG is implemented. As well, provincial programs that deliver redistribution in kind rather than by transfers, including social services, health care and education, would remain intact.

Government transfer are typically not well targeted to those most in need, and many are not indexed. Some are delivered in ways that are stigmatizing and do not encourage labor market participation or work effort. And, transfer recipients tend to fall into separate categories of persons who rely mostly on federal support—such as the elderly, the working poor, the temporary unemployed and children—and those who rely on provincial support—the long-term unemployed and the disabled.

The inadequacy of the level of support for low-income persons can be judged by comparison with poverty measures. Although there is no official poverty line in Canada, the Low-Income Cutoff (LICO) compiled by Statistics Canada (2016) is a useful benchmark. It measures the income level at which a family of a given size spends 20 percentage points more than the average family (of the same size) on food, clothing and shelter. LICOs vary by size of family (for seven different family sizes) and populations of place of residence (for five different population sizes) to reflect different costs of living. In 2011, the LICO for a single person was \$14,454 in towns with less than 30,000 inhabitants, \$16,328 in cities between 100,000 and 500,000, and \$19,307 in cities above 500,000. For two person families, the corresponding figures were \$17,592 in towns with less than 30,000, \$19,872 in cities 100,000 to 500,000, and \$23,492 in cities above 500,000. For four person families, it was \$27,329 in towns less than 30,000, \$30,871 in cities 100,000 to 500,000, and \$36,504 in cities

above 500,000. Only seniors receiving OAS/GIS come close to LICO amounts, and then only for small municipalities. Alternatives to the LICO include the Low Income Measure (LIM), which is one-half of the median income level adjusted for family size, and the Market Basket Measure (MBM), which is the income required to buy a specific basket of goods and services that represents a very basic standard of living. The MBM is adjusted by family size and is calculated for different regions. For our purposes, a precise poverty line measure is not important. Current income supports leave many Canadians well below any of these different poverty benchmarks.

To summarize, few Canadian adults are left with no income. Most of those with little or no earnings receive government support either through one of a variety of programs, including welfare or disability assistance, OAS/GIS, social insurance programs like EI, CPP/QPP and workers compensation, and refundable tax credits. However, together these suffer from a number of deficiencies. The amounts available vary considerably among programs, and almost no transfer recipients receive enough to put them above poverty lines such as LICO, LIM or MBM measures.

Moving to a national BIG involves reforming existing transfer programs or replacing them with a uniform system, and coordinating federal and provincial programs so that a harmonized BIG is achieved, albeit with some provincial government discretion. The existing refundable tax credits and the OAS/GIS system are proven models for delivering an income-tested transfer that could be exploited in a BIG program. Both of these systems take advantage of the income tax collection machinery administered by the CRA. The self-reporting feature combined with the anonymous administration minimizes onerous application, conditionality and stigmatization associated with transfer systems like welfare, disability and EI. The design flaws of existing transfers administered through the income tax system as outlined above could in principle be readily overcome, although it might entail gainers and losers. We return to the specifics of our proposal below.

### **3.2 The Federal-Provincial Tax Harmonization System**

Our national BIG proposal is inspired by tax harmonization arrangements that are unique features of the Canadian federation and have served as a model worldwide. These apply to the personal and corporate income tax systems as well as to sales taxes. In each case, tax harmonization is based on bilateral federal-provincial agreements that follow a com-

mon template. For the personal income tax, agreeing provinces—which include all except Quebec—sign a Tax Collection Agreement (TCA) that obliges them to accept the federal tax base while allowing them discretion over their provincial rate structures and non-refundable tax credits. Taxes are administered by the CRA and are allocated to provinces according to the taxpayer’s province of residence on December 31 of the taxation year. The federal government turns over tax revenues owing to the provinces in as timely a manner as possible, and is responsible for unpaid taxes.

The TCAs for the corporate tax—which apply to all provinces except Alberta and Quebec—operate in a similar way. Provinces use the federal tax base but choose their own general and small business tax rates. They also have some discretion over the choice of tax credits provided they are not discriminatory and do not impede internal market efficiency unduly. Where corporations operate in more than one province, the tax base is allocated among provinces for provincial tax purposes according to an allocation formula that gives equal weight to shares of revenues and payrolls in each province.

Sales tax harmonization follows similar principles, although it is slightly more complicated because of the value-added nature of the federal GST. Provinces that harmonize their sales taxes with the GST (the Atlantic Provinces plus Ontario) must replace their retail sales taxes with the harmonized sales tax (HST). The HST rate consists of the federal rate of 5% plus the rate chosen by each participating province. Provinces also have some discretion to give preferential tax rates to some types of consumer goods. Registered sellers in each province apply the relevant HST rate where the sale takes place, and firms that purchase taxed goods can claim an input tax credit. Firms with sales of less than \$30,000 per year are exempt from the system. The CRA administers the system, but does not keep track of the amount of tax owing to each province. Instead, the allocation of HST revenues across provinces is based on estimates of aggregate consumption in each province. Although this is necessarily imperfect, misallocated provincial tax revenues are partly undone by the equalization system since sales tax revenues are subject to equalization, albeit only for equalization receiving provinces and at national average provincial HST rates. Although Quebec does not participate in the HST, the Quebec sales tax (QST) is also harmonized with the GST. The Quebec revenue agency administers both the QST and the GST collected in the province, and turns over revenue from the latter to the federal government. The absence of border controls makes the tax slightly more difficult to administer for cross-border

transactions, and the consequences of that for tax compliance have not been established. In the European Union, firms have been able to exploit the absence of border controls with various devices, some of them illegal (Crawford, Keen and Smith, 2010).

There are a number of features of these tax harmonization arrangements that make them useful models for implementing a national BIG. They illustrate how the federal government can successfully pursue a harmonization initiative that the provincial governments can choose to join. Provincial choices involve a perception that there are net benefits to them of joining. In the case of tax harmonization, these benefits include the collection and compliance benefits of a harmonized system with a single tax-collecting authority combined with the discretion they retain to set their own tax rates. Those who choose not to join perceive some benefit from retaining control over their tax bases despite having to collect their own taxes. In the case of the income taxes, provincial control over tax policy by provinces that do not participate has not really led to significantly different tax structures. Harmonization with the GST is a more substantial reform since it requires a significant change in the tax base, including broadening the base to include goods and services that are not taxed under provincial retail sales taxes.

The TCAs are not without problem. Some provinces have expressed concern over the accuracy of initial reimbursements to the provinces, given that final reconciliation of taxes collected on behalf of provinces occurs more than a year after the end of the tax year. As well, there are concerns with the allocation formula. Corporations are able to manipulate it to some extent through the use of affiliates in different provinces, given that they do not have to report consolidated accounts for tax purposes. As well, when a federal revenue agency administered personal and corporate income taxes, some provinces worried that not enough attention was paid to ensuring compliance with the allocation formula since there was nothing at stake for the federal government. Since tax administration has been turned over to the CRA, presumably that is less of a concern. Despite these problems and the limitations the tax harmonization agreements have for provincial policy discretion, no provinces have left the TCAs and in recent years Ontario has signed a corporate TCA. In the case of sales taxes, provinces have gradually been joining the HST, although in the British Columbia case that intention was overturned by a fractious referendum.

From the perspective of a national BIG, the tax harmonization agreements show the feasibility of the federal government achieving harmonization voluntarily with the provinces

in a situation in which both levels of government have legislative jurisdiction and interests in the policy issue. The feasibility of a BIG harmonization agreement is not an issue given that transfers administered through the income tax system face similar compliance issues as the income tax itself. The implementation issue is one of political will. For a harmonization scheme to work, the federal government must assume the role of initiator with the expectation that provinces who join would agree to accept some basic structure of a BIG in return for having some discretion over a provincial component. In addition, a BIG administered through the income tax system would have to accept net income as defined for tax purposes as being the appropriate measure by which to condition or tax back BIG transfers (as is the case for existing income-tested transfers).

Federal-provincial tax harmonization is part of a broader system of fiscal arrangements that have a bearing on the kind of fiscal reforms we are contemplating. The relevant elements for our purposes are the federal-provincial transfer systems. One of these is Equalization which makes unconditional transfers to provinces with revenue capacity below the national average to bring them up to the national average. National average revenue capacity is based on the ability to raise revenue from five sources: personal income tax, corporation tax, sales taxes, property taxes and natural resource revenues. This system would remain intact with our reforms, and there is no need to discuss it in detail. In addition, the Canada Health Transfer (CHT) and Canada Social Transfer (CST) are equal per capita transfers nominally in support of provincial health, social assistance and services, and post-secondary education. They have mild conditions attached to them, but are otherwise available for the provinces to use at their discretion. An important purpose of the transfer system is to maintain balance in the federation, both horizontally and vertically. The CST in particular is intended to assist the provinces in financing social assistance, and to the extent that social assistance will be replaced by a BIG, the size of the CST may need to be revisited.

Given these considerations, we propose a feasible process for implementing a national BIG program that could potentially address the deficiencies of the existing transfer programs and harmonize federal and provincial transfers. This process entails two stages. In the first stage, the federal government unilaterally introduces a federal BIG taking as given provincial transfer programs. In the second stage, the provinces are encouraged to harmonize their transfers with the federal BIG system. This entails among other things replacing their welfare and disability programs with income-tested unconditional BIG transfers.

## 4 A Two-Stage Basic Income Guarantee Proposal

Let us now turn to the details of a two-stage procedure for implementing a national BIG. Our national BIG encompasses two elements: a federal BIG and a provincial BIG, with each level of government retaining some discretion over program size but within a harmonized framework. Stage One involves unilateral federal transfer reform, taking as given existing provincial policies. Stage Two explores individual provincial actions analogous to negotiating tax harmonization agreements (TCAs, HST) with the federal government. This latter stage could involve many alternative templates involving the nature of provincial discretion and the rebalancing of federal-provincial fiscal arrangements. Our proposal will be somewhat general, leaving full details to be worked out later, although we mention many aspects that would need to be considered. Naturally, some intergovernmental consultation would be expected rather than the federal government simply choosing the terms of provincial transfer harmonization. But in the end, the onus will be on the federal government to provide a framework that the provinces can agreeably sign up for, analogous to the TCA process.

### 4.1 Stage One: A Federal BIG

The first stage is contingent on the parameters of a national BIG that the federal government would ultimately prefer. The latter involves a basic BIG amount and a tax-back schedule. The basic amount could, like the LICO, vary by family composition and size of community, and it could also vary by personal circumstances, such as disability and province of residence. To keep matters simple, suppose however that a common basic amount is chosen, say, \$20,000 per single adult per year, and \$6,000 per child. The adult BIG could be adjusted to take account of family size using standard family equivalence scales. Following OECD (2008) and Statistics Canada (2016), we adopt the square-root scale: a two-adult family would receive \$20,000 times  $\sqrt{2}$ , a three-adult family \$20,000 times  $\sqrt{3}$ , and so on, in addition to what they receive on behalf of any children. (As discussed below, the CCB serves as the BIG for children, and for simplicity we make no family size adjustment for them.) These amounts represent the benchmark national BIG. Variations on this could be introduced either in this stage by the federal government or in Stage Two by the provinces without affecting our methodology. In Stage One, the federal government would choose

BIG levels less than the national benchmark, given that when provinces agree to join they will implement provincial supplements.

Similarly, the tax-back schedule could be more or less complex, varying by individual or family income and being uniform or piecewise linear. Again for simplicity, we take the tax-back rate to be constant as in a classical negative income tax, or flat tax, system, say, 30%. We assume that the tax-back rate applies to family net income, comparable to many existing tax credits. The choice of a tax-back rate is not innocuous since it affects the income level at which the BIG disappears as well as labour market participation and work effort incentives. For example, to promote labour force participation, the tax-back rate could be zero for some initial income range and positive thereafter, as in one option proposed by Simpson and Stevens (2015). As well, the tax-back rate could be based on individual net income if one wanted to avoid introducing family considerations and spousal work incentives into the system. Moreover, if the tax-back is based on family income, one might want the tax-back rate to depend on family size so that the phase-out occurs at different levels for different family sizes.

Given these basic parameters and taking provincial policies as given, the principle on which Stage One is based is that the federal BIG brings all individuals<sup>8</sup> up to at least a basic federal guarantee level taking into account provincial transfers. In practice, we are mainly concerned with provincial welfare and disability transfers since they are the dominant form, but provincial refundable and non-refundable tax credits should also be taken into account. There are four main issues with implementing this. The first is how to deal with the fact that provinces offer different levels of support. The second is how to finance the federal BIG program. The third is what level of federal BIG to choose given the ideal nationwide levels which we assume to be \$20,000 and \$6,000 for adults and children, respectively, with the adult amount corrected for adult family equivalence scales. The fourth is how to ensure that the provinces maintain their existing welfare and disability transfers when the federal government implements a federal BIG supplement to them.

With respect to the first problem, simply topping up provincial welfare and disability transfers to the BIG level would be problematic. It would provide an incentive for provinces to reduce their transfer rates, and, by undoing differences in provincial rates, to nullify provincial preferences and contradict the spirit of federalism. We propose the following

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<sup>8</sup>The scope of individuals who are included in the BIG program could include all permanent residents, where residency is defined as in the income tax system.

procedure to mitigate the incentive problem and preserve provincial discretion. National average provincial transfer rates would be calculated for welfare and disability assistance. The calculation could be done for the different categories of recipients by family size and would be weighted by the number of recipients in each province. The BIG transfer to persons in each category would be the basic federal BIG less the relevant national average provincial welfare or disability transfer. The result would be that welfare or disability recipients in any given category would receive the same federal BIG top-up but different overall amounts in different provinces. These different amounts would reflect different preferences across provinces. The fact that the federal BIG is based on national average provincial transfer rates mitigates the incentive the provinces would otherwise have to reduce their transfers in expectation of the federal top-up making up the difference.<sup>9</sup> Note that as provincial welfare rates change, the federal add-on would have to be recalculated (until the provinces harmonize with the federal BIG in Stage Two).

All persons other than provincial welfare and disability recipients would receive the full federal BIG as discussed below. The BIG transfer would be taxed back at the chosen rate based on some measure of income. This could be similar to net income for tax purposes, which includes taxable sources of transfer income like EI and CPP/QPP. However, it should exclude provincial social assistance transfers, so would be slightly different than the base to which the income tax rate schedule applies. The overall effective marginal tax rates would be the sum of the tax-back rate and the marginal income tax rate. The marginal tax rate could be relatively high before the BIG is fully clawed back. High tax-back rates at low income levels are a necessary consequence of targeted transfer programs and a potential source of work disincentive effect. Note that provinces also apply varying tax-back rates to employment income earned by welfare and disability recipients. One would want to ensure that the BIG tax-back rate and the provincial welfare/disability tax back rates are not both applied to the same earnings. This would be assured in the federal BIG by our assumption that the BIG tax-back rate excludes provincial welfare and disability incomes.

Second, the federal BIG would be financed in part by other federal transfers that are

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<sup>9</sup>This use of averaging over provincial behaviour to reduce provincial incentives is not without precedent in Canada. It was used in the shared-cost transfers for hospitals and medical care that preceded the Canada Health and Social Transfer that became the CST and CHT. It is also used to calculate national average provincial tax rates in the Equalization system. Note that incentive effects would be reduced further if a straight average of provincial welfare and disability rates were used, but weighting by populations improves makes the average a more accurate reflection of provincial policies.

eliminated. These would include OAS/GIS and refundable tax credits like the CCB, the GST Credit and WITB. Most non-refundable tax credits would also be eliminated, with the possible exception of those intended to achieve clearly non-redistributive objectives like credits for charitable donations and political contributions.<sup>10</sup> Only federal tax credits would be eliminated in Stage One since no unilateral changes are made to provincial fiscal programs. Neither EI nor CPP/QPP would be eliminated, so their contributions would remain intact, although as mentioned they would affect the tax-back rate of the BIG with income. Shortfalls in financing would have to be made up from other revenue sources. We return to the issue of the financial consequences of a federal BIG program later.

Eliminating OAS/GIS and the CCB when the federal BIG is introduced might be controversial and perhaps not necessary. Potentially some elderly persons could be made worse off by the reform, although this might be managed during the transition. And, the CCB is roughly comparable to the proposed BIG for children. However, leaving seniors and children out of a national BIG detracts from the comprehensiveness of the program, and that would not be desirable in the long run. In our illustration below, we keep the CCB in place for simplicity, but replace OAS and GIS with our national BIG.

The third issue is the size of the federal BIG. Given that provincial refundable and non-refundable tax credits will remain in place in Stage One, they will be available to finance the provincial component of a national BIG in Stage Two. This means that the basic federal BIG can be correspondingly less than \$20,000 per single adult and \$6,000 per child. How much less depends upon the amount of revenue that is freed up for the provinces when they eliminate their tax credits. In our illustrative calculation below, we determine the federal BIG by first estimating the total values of federal and provincial NRTCs and RTCs. The federal BIG is then \$20,000 times the share of federal share of total NRTCs and RTCs. A further adjustment in the federal BIG is needed to take account of the fact that the federal government assumes primary responsibility for transfers to seniors through OAS/GIS. To recognize this and to prevent seniors from suffering in Stage One, we assume the federal government offers the full national BIG to seniors in Stage One and continues to do so in Stage Two.

The final requirement in implementing Stage One is that the provinces do not undo

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<sup>10</sup>Simpson and Stevens (2015) study the effects of converting all non-refundable tax credits into a single refundable tax credit with a relatively low tax-back rate of 15–20%. This generates a form of basic income, but it is relatively small compared with poverty measures like the LICO.

the effect of the federal BIG by reducing or even eliminating their welfare and disability transfers. In principle, it is not possible for the federal government to require provinces to maintain the integrity of their transfer programs when a federal BIG is introduced. The best the federal government can do is to appeal to the provinces to keep their programs intact and only dismantle them in Stage Two. The force of this appeal is strengthened to the extent that the federal BIG does not tax-back provincial transfers, and to the extent that the generosity of the CST system is retained or even enhanced. But in the end, the good will of the provinces must be relied on. There is precedent for this. When the CCB was introduced by the federal government in its 2016 budget, the provinces and territories all voluntarily agreed that the CCB would not be clawed back from welfare or disability payments.<sup>11</sup> One would hope that a similar reaction could be obtained if a federal BIG is implemented. If not, the only recourse for the federal government would be to adjust CST transfers with all the undesirable connotations that implies.

The federal BIG program would be administered by the CRA, and would be based on tax returns filed. Like existing refundable tax credits, the entitlement to BIG would be based on the previous years tax return and could be recalculated in July 1 each year. Since both provincial tax and transfer programs would remain intact in Stage One, provincial finances would not be affected by changes in the federal income tax system when the BIG is introduced. Therefore, vertical balance between the federal government and the provinces would not be affected, so there would be no need to adjust federal-provincial transfers. This issue becomes relevant in Stage Two below when provinces adopt a BIG that is harmonized with the federal one.

## **4.2 Stage Two: Provincial Harmonization**

As in the case of the GST/HST and the TCAs, once a federal BIG is in place, provinces could be invited to join. Those who chose to join would do so individually by negotiating a bilateral national BIG (NBIG) agreement with the federal government. The basic structure of the NBIG would be based on the federal one, but provinces could have some discretion over the size of their component. A common tax-back rate would apply at least initially, although in the long run there might be some flexibility for province-specific tax-back components.

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<sup>11</sup>See the CBC report at: <http://www.cbc.ca/news/politics/ccb-social-assistance-clawback-provinces-campaign-2000-1.3675873>.

Provinces that agree to participate in a NBIG would replace their social assistance and disability transfers with a provincial BIG, where the NBIG applying to a province's social assistance and disability recipients would be the sum of the federal BIG and the province's chosen BIG level. The provinces would also eliminate their refundable and non-refundable tax credits and use the proceeds to finance their provincial components of the NBIG. The provincial BIG would replace only provincial transfers. Ideally, social services would be conditioned on something other than social assistance or disability status because part of the purpose of the BIG is to eliminate the administration costs and stigma associated with determining eligibility for welfare. This implies that ultimately there would only be a single uniform provincial BIG system with no distinction between welfare recipients and others.

Federal-provincial financing arrangements would have to be revised for provinces joining the NBIG. The NBIG would be administered through the income tax system by the CRA rather than by individual provinces. Some mechanism would be required to recover from the provinces their individual shares of the NBIG. One option would be to do that through a revised CST, which is currently an equal per capita federal transfer in support of provincial social assistance, social services and post-secondary education. This could be reduced for participating provinces by the size of the provincial component of the NBIG, since the latter would be paid for by the federal government through the CRA. This amount would have to be adjusted as provinces adjust their BIG rates.

An important consideration is how eligibility for the provincial BIG as well as for ongoing social services should be determined. At the time that a province joins the NBIG, existing eligibility rules for provincial welfare and disability would apply and would determine eligibility for the provincial BIG as well as for ongoing social services. However, this is not an ideal long-term solution. For one thing, it entails using eligibility criteria that are part of the problem with the existing system (e.g., employment and asset restrictions). For another, it implies that the provincial BIG component will be restricted to the categories of persons who received welfare and disability, that is, the long-term unemployed and the disabled. Once provinces have joined the NBIG, there is no reason to restrict provincial BIG recipients to those persons.

In the medium run, the NBIG could evolve into one in which the provincial BIG could apply to all BIG recipients. This could be accomplished by the federal government creating "BIG room" for the provinces, analogous to the way it has provided tax room to give

provinces more discretion over tax policy. For example, the federal BIG could be reduced by some proportion and the provinces invited to choose their own provincial BIG rates. To accommodate this and to provide some incentive to the provinces to participate without unduly inducing fiscal competition, the federal-provincial CST could be adjusted. The CST would continue to be an equal per capita transfer to all provinces to avoid affecting the incentives provinces have in designing their social programs.

If the NBIG had a provincial component that applied to all persons, the need to determine eligibility for welfare would no longer apply. They may still choose to offer a higher provincial BIG rate to the disabled, in which case eligibility for that would still apply. Indeed, provinces may choose to offer differential BIG rates for other groups as well, such as families, although federal-provincial NBIG harmonization rules may restrict such discretion in the interest of simplicity. More generally, the design and delivery of social services, including eligibility criteria, would have to be revisited.

## 5 An Illustrative Calculation

To illustrate the potential feasibility of implementing our proposed national BIG in Canada, we use Statistics Canada’s Social Policy Simulation Database and Model (SPSD/M Version 22.1). The SPSD/M package is a vast repository of detailed information and description regarding the tax and transfer systems of both the federal and provincial governments. It is constructed by combining individual data from personal income tax returns, the Survey of Labour and Income Dynamics, unemployment and claimant histories and the Survey of Household Spending. The data are then adjusted using survey weights to ensure that the population accurately corresponds to Census data.<sup>12</sup> The SPSD/M is the only statistically representative and integrated database in Canada. It is, however, static, meaning that it cannot be used to simulate behavioural responses to policy alterations without further assumptions which we do later in this section. Despite this, the SPSD/M is particularly well-suited for this paper given its strong simulation capabilities, and highly accurate depiction of the Canadian tax-transfer system.

Simpson and Stevens (2015) use the SPSD/M to examine the impact of converting all federal non-refundable tax credits into refundable ones, which are then subject to a common

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<sup>12</sup>Persons living in the Yukon, the Nunavut or Northwest Territories, those residing on First Nation reservations, and armed forces personnel residing in barracks are not included in the SPSD/M.

clawback rate. While we follow their methodology, the focus of their proposed reform is quite different from the one we have proposed. First, the level of income guarantee it is not substantial enough to represent a reasonable BIG, which ultimately seeks to ensure that all individuals are able to afford basic needs. Second, the BIG design necessitates a comprehensive reform of the tax and transfer system. While converting NRTCs to RTCs would considerably improve equity in the personal income tax system, BIG arguably advocates for far more change. Finally, they consider only federal tax credit reforms and not provincial ones. With this in mind, in the following analysis we adapt the Simpson and Stevens (2015) study to a BIG setting in a federal context.<sup>13</sup>

### 5.1 Stage One: A Federal BIG

As discussed above, the implementation of BIG would take place in two stages. Stage One involves eliminating the following federal non-refundable tax credits: basic personal amount, age, married, married equivalent, employment, public transit, fitness, pension income, dependent caregiver, disability, all education credits, the family tax cut, family caregiver and infirm dependents. Those credits that are contributory in nature (CPP, EI, political and charitable tax credits) have all been kept intact since their intent is to encourage forms of behaviour rather than to redistribute. The federal government would also remove the OAS and GIS income transfer programs targeted at the elderly. The elimination of all tax credits as well as OAS/GIS is for simplicity. Similar results would be obtained if only the basic personal amount were eliminated and all other credits remained intact. The basic personal amount represents over three-quarters of all NRTCs, while OAS/GIS serves as a basic income for seniors.

For simplicity, the CCB program is not eliminated, and instead works in tandem with BIG. BIG is delivered to individuals based on an adult-only family equivalence scale. This is problematic given that families with more children face higher costs of living. Giving a basic income for children is thus crucial for ensuring that families of different sizes are not disadvantaged by the policy. Accordingly, our proposal retains the CCB, which functions as a BIG for individuals under 18 years of age as described above.

The federal BIG introduced in Stage One consists of a basic amount and a tax-back rate based on family net income. Since the federal and provincial components of BIG are to be

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<sup>13</sup>A preliminary version of our simulations was undertaken in Koebel (2016).

financed by eliminating NRTC, RTC and OAS/GIS, the federal basic BIG is calculated as \$20,000 times the share of federal transfers relative to provincial ones. The total value of federal NRTC, RTC and OAS/GIS is \$106.74 billion (see Table 2), while the value of provincial NRTC and RTC is \$42.31 billion. Therefore, the federal share of transfers eliminated is 71.6%, so the federal BIG is \$14,322 (0.7161 times \$20,000). This applies to non-senior adults in all provinces who are in one-adult families and do not receive social assistance or disability benefits. For the latter, the amount of the federal BIG is \$14,322 less the average value of those benefits for various categories of persons. Table 1 indicates these amounts. For families with two adults, the total federal BIG for all adults is  $\sqrt{2}$  times \$14,322, or \$20,251, while for three-adults families, it is \$24,806. For seniors, the federal BIG is \$20,000 adjusted by adult-equivalence scales.

**Table 1:** Parameters of the Proposed Basic Income Guarantee - Stage One

	Basic Income Guarantee	Reduction Rate	Exit Level
Single Non-Senior Adults	\$14,322	30%	\$47,740
Single Seniors	\$20,000	30%	\$66,667
<b>Provincial Welfare or Disability Recipients</b>			
Single Employable	\$6,801	30%	\$22,670
Disabled Persons	\$2,558	30%	\$8,527
Single Parent, One Child	\$3,325	30%	\$11,083
Two Parents, Two Children	\$545	30%	\$1,817

*Note:* Adult equivalence scales are applied. The exit level refers to the family net income at which BIG entitlement becomes zero.

The tax-back rate is chosen such that the reform is roughly self-financing. The sources of finance in Stage One are listed in Table 2. These are more than sufficient to ensure that the federal BIG is self-financing if the tax-back rate is 30%. Specifically, for all recipients the BIG is reduced by the constant benefit reduction rate of 30% applied to family net income (total income minus deductions) until the guarantee reaches zero. The use of family net income ensures that the proposal is consistent with current federal tax-back practices. The excess of financing indicated in Table 2 is prudent given the labour supply responses that we estimate below. The single tax-back rate is assumed for simplicity. As mentioned, it might be preferable for labour market participation to assume a zero tax-back rate for an

initial amount of income and a positive one thereafter. In that case, the tax-back rate would have to be correspondingly higher to ensure revenue neutrality. As Table 1 indicates, with a tax-back rate of 30%, the federal BIG is phased out for single non-senior adult non-welfare recipients at a net income of \$47,740, which is lower than the income at which existing refundable tax credits and the OAS/GIS disappear.

In the absence of behavioural responses, implementing our federal BIG and eliminating most federal refundable and non-refundable tax credits amounts to a pure income redistribution program. Tables 3 and 4 illustrate these redistributive effects. In Table 3, the average change in family disposable income for persons in each decile of the income distribution are shown in absolute and percentage terms. Here, deciles are based on individuals according to their family net income, and these do not change when the federal BIG is introduced.

Not surprisingly, gains decrease as one goes up the decile groups, except for the top two deciles. Those in the bottom decile reap an average gain of 119% in disposable income, while the top group loses 2.81% on average. The losses at the top are all due to eliminating the benefits of tax credits, and these are relatively uniform in absolute terms in the top five deciles. Only the bottom half of the population in terms of net income obtain some federal BIG transfer, and that diminishes as income increases. Note that the average change in disposable incomes is negative overall, reflecting the fact the revenues raised are slightly more than the cost of providing the BIG.

Table 4 focuses on families in the bottom decile of the net income distribution of all persons, and shows how the gains from the federal BIG vary by family type within this decile. On average, each of the different family groups appear to benefit quite a bit from the basic income. Of particular note is the fact that elderly single persons and single parents gain the least. This is because they fare relatively well under existing programs, especially the elderly. Indeed, some elderly OAS/GIS recipients may be worse off as a result of the federal BIG reform since their initial disposable income exceeds the federal BIG. To the extent that this is a concern, program design would have to address it in a further refinement. Note that some of the disposable incomes in this table seem quite high considering that only individuals in the bottom decile are displayed. This result is a consequence of defining the decile thresholds using family net income. While BIG will substantially increase disposable income, net income will not change at all.

**Table 2:** Sources of Financing for the Basic Income Guarantee - Stage One, 2015

<b>Non-Refundable Tax Credit</b>	<b>Tax Expenditure (\$ Billions)</b>
Basic	\$34.03
Age	\$2.87
Married	\$2.66
Married Equivalent	\$0.00
Canada Employment Credit	\$2.62
Public Transit	\$0.18
Fitness	\$0.13
Pension Income	\$1.36
Dependent Caregiver	\$0.06
Disability	\$0.43
Interest on Student Loans	\$0.43
Tuition	\$0.33
Education Allowance	\$0.21
Textbook	\$0.03
Family Tax Cut	\$2.00
Family Caregiver	\$0.05
Infirm Dependents	\$0.01
<b>Total Non-Refundable Tax Credits</b>	<b>\$47.40</b>
<b>Income Transfer</b>	<b>Tax Expenditure (\$ Billions)</b>
Old Age Security	\$40.77
Guaranteed Income Supplement & Spouse's Allowance	\$12.24
Working Income Tax Benefit & Supplement	\$1.55
Goods and Services Tax Credit	\$4.60
Medical Expense Supplement	\$0.18
<b>Total Income Transfers</b>	<b>\$59.34</b>
<b>Total Revenue (\$47.40 billion + \$59.34 billion)</b>	<b>\$106.74</b>
<b>Total Expenditure on BIG</b>	<b>\$98.65</b>
<b>Budget Surplus</b>	<b>\$8.09</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

**Table 3:** Average Impact of Stage One BIG on Family Disposable Income by Family Net Income Decile, 2015

	Average BIG	Average Change in Taxes	Average Family Disposable Income		Average Change in Disposable Income	
			Before BIG	After BIG	(\$)	(%)
Bottom Decile	\$11,844	\$102	\$8,868	\$19,422	\$10,554	119.01%
Second Decile	\$12,481	\$996	\$14,709	\$21,334	\$6,625	45.04%
Third Decile	\$10,838	\$1,808	\$21,308	\$25,263	\$3,955	18.56%
Fourth Decile	\$7,603	\$2,407	\$28,253	\$29,370	\$1,117	3.95%
Middle Decile	\$4,113	\$2,779	\$36,123	\$33,792	-\$2,331	-6.45%
Sixth Decile	\$957	\$3,003	\$45,254	\$40,628	-\$4,626	-10.22%
Seventh Decile	\$116	\$3,351	\$55,474	\$50,151	-\$5,323	-9.60%
Eighth Decile	\$0	\$3,774	\$71,013	\$65,604	-\$5,409	-7.62%
Ninth Decile	\$0	\$4,144	\$92,725	\$87,427	-\$5,298	-5.71%
Top Decile	\$0	\$4,439	\$175,961	\$171,009	-\$4,952	-2.81%
<b>Aggregate</b>	<b>\$4,793</b>	<b>\$2,684</b>	<b>\$54,982</b>	<b>\$54,411</b>	<b>-\$571</b>	<b>-1.04%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

Tables 5 shows how poverty and income distribution measures are affected by the BIG reform. The poverty level is taken to be the after-tax LICO amount for various family types. The rate of poverty is the proportion of the relevant population below that level. As Table 5 indicates, the rate of poverty falls significantly for all groups except elderly couples, and the average poverty rate falls by almost 48%. The rate of poverty rises to 5.1% for elderly couples persons who had the lowest poverty rate before the Stage One reform, which is mentioned as a cause for concern that may need to be addressed. A similar picture emerges for changes in the Gini Coefficient. As the last row indicates, the Gini Coefficient falls by almost 10%. This indicates that inequality has been reduced significantly.

The above redistributive effects include only the impact effects of the policy change and ignore behavioural responses. The replacement of federal refundable and non-refundable tax credits with the federal BIG will change both income levels and effective marginal tax rates (EMTR) on income. These will affect labour supply through standard income and substitution effects. With respect to the former, higher income groups will face a reduction

**Table 4:** Average Impact on Family Disposable Income for Nuclear Families in the Bottom Decile, 2015

	N (000s)	Average BIG	Average Family Disposable Income		Average Change in Disposable Income	
			Before BIG	After BIG	(\$)	(%)
Single Parent	150	\$5,744	\$24,869	\$29,680	\$4,811	19.35%
Two Parent	59	\$16,327	\$28,188	\$43,384	\$15,196	53.91%
Non-Elderly Single	1,661	\$11,513	\$5,830	\$16,855	\$11,025	189.11%
Non-Elderly Couple	65	\$17,105	\$14,011	\$30,359	\$16,348	116.68%
Elderly Single	90	\$17,378	\$17,700	\$20,731	\$3,031	17.12%
Elderly Couple	30	\$23,584	\$20,457	\$34,623	\$14,166	69.25%
Disabled Persons	907	\$10,286	\$12,843	\$21,532	\$8,689	67.66%
<b>Aggregate</b>	<b>2,962</b>	<b>\$11,844</b>	<b>\$8,868</b>	<b>\$19,422</b>	<b>\$10,554</b>	<b>119.01%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

**Table 5:** BIG Impact on the Rate Poverty and Gini Coefficient for Nuclear Families, 2015

Nuclear Family	Rate of Poverty			Gini Coefficient		
	Pre-BIG	Post-BIG	Impact (%)	Pre-BIG	Post-BIG	Impact (%)
Single Parent	15.9%	0.1%	-99.37%	.3076	.2782	-9.56%
Two Parent	4.9%	1.1%	-77.55%	.3059	.3066	0.23%
Elderly Single	10.3%	7.9%	-23.30%	.2919	.2744	-6.00%
Elderly Couple	2.3%	5.1%	121.74%	.3364	.3876	15.22%
Non-Elderly Single	26.0%	12.9%	-50.38	.4714	.3233	-31.42%
Non-Elderly Couple	4.3%	1.9%	-55.81%	.3570	.3573	0.08%
Disabled Persons	16.4%	9.9%	-39.63%	.4221	.3855	-8.67%
<b>Aggregate</b>	<b>11.9%</b>	<b>6.2%</b>	<b>-47.90%</b>	<b>.4603</b>	<b>.4144</b>	<b>-9.97%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

in income and, assuming leisure is a normal good, this will encourage an increase in labour supply. By the same token, those in the lower part of the income distribution will obtain higher incomes and this will discourage work.

The substitution effect is more complex. In 2015, the first \$45,282 of taxable income was

subject to a tax rate of 15%. For those who fall in this tax bracket, the introduction of BIG will increase the marginal tax rate on income to 45%. This is relatively large and has the potential to significantly distort labour decisions.<sup>14</sup> Because the exit level of BIG is roughly \$48,000, mainly individuals in this bracket will face the higher EMTR. For those who do not receive any BIG, their EMTR will be unaffected. In addition, since most of the federal non-refundable and refundable tax credits, as well as the OAS/GIS program, that are being eliminated are also clawed back, the implicit marginal tax rate before the BIG is introduced will be higher than the statutory marginal tax rate for many taxpayers. However, due to the number and structural variety of NRTCs and RTCs, an illustrative calculation capturing the extent to which EMTRs would change after their removal is far too difficult to estimate so we ignore it. In estimating substitution effects from introducing the federal BIG, we therefore assume that the EMTR rises from 15% to 65% for BIG recipients, but remains unchanged for non-recipients. This will induce lower-income persons to reduce their labour supply, thus reinforcing the income effect. For higher income persons, there is no substitution effect so their labour supply should unambiguously increase. Note that by ignoring the implicit marginal tax rates in the pre-BIG system of refundable and non-refundable tax credits, and therefore overestimating actual substitution effects, our estimates will overstate the negative labour supply consequences of introducing the federal BIG.

To estimate the behavioural impacts of the federal BIG, we follow the methodology used by Simpson and Stevens (2015). Changes in labour supply will depend on substitution and income elasticities. Based on a recent survey of academic work by McClelland and Mok (2012), Simpson and Stevens assume that income elasticities for both men and women are 0.05, while substitution elasticities are 0.2 for men and single women, and 0.3 for married women. The income effect is calculated by multiplying the income elasticity by the share of employment income in total income, and the change in disposable income due to the basic income. The substitution effect is obtained by multiplying the substitution elasticity by the change in the combined personal income and BIG tax rates, and baseline employment income.<sup>15</sup>

Table 6 shows the labour supply effects of implementing the federal BIG using the above

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<sup>14</sup>In fact, this underestimates the distortion because we are neglecting provincial taxes. These range from 5–10% for those in the first bracket. In Ontario, income in the first bracket is taxed at 5.05%. The change in the marginal tax rate when the federal BIG is introduced is not affected by provincial rates.

<sup>15</sup>Refer to the appendix in Simpson and Stevens (2015) for more details regarding the methodology used for estimating the labour supply response of a reform in the tax-transfer system.

methodology for estimating income changes resulting from income and substitution effects. As expected, income effects lead higher income persons to supply more labour and lower income persons less. Substitution effects are negative, especially for low income persons whose EMTR rises significantly. The overall effects resulting from the sum of income and substitution effects are shown in the two columns labeled Total Effect. Those in the bottom six deciles of the net income distribution reduce their labour supply and thus their earnings, while those in the top four increase their's. In aggregate, employment earnings fall by less than one percent. The fall is much higher in percentage terms for those in the lowest deciles, but their incomes are much lower to begin with so the absolute reduction is limited. These changes in earnings will affect the federal BIG program in two main ways. First, the cost of the BIG will increase since with lower incomes eligibility will rise. On the other hand, higher income persons will earn more and pay more taxes.

**Table 6:** Stage One Substitution and Income Effects of Individual Tax-Filers by Income Decile, 2015

	Average Earnings Per Adult	Average Dollar Value			Percent of Employment Earnings		
		Substitution Effect	Income Effect	Total Effect	Substitution Effect	Income Effect	Total Effect
Bottom Decile	\$594	-\$47	-\$99	-\$146	-7.9%	-16.6%	-24.5%
Second Decile	\$4,575	-\$280	-\$196	-\$476	-6.1%	-4.3%	-10.4%
Third Decile	\$7,868	-\$475	-\$120	-\$595	-6.0%	-1.5%	-7.5%
Fourth Decile	\$12,015	-\$708	-\$57	-\$765	-5.9%	-0.5%	-6.4%
Middle Decile	\$16,598	-\$809	\$10	-\$799	-4.9%	0.1%	-4.8%
Sixth Decile	\$23,355	-\$423	\$59	-\$364	-1.8%	0.3%	-1.5%
Seventh Decile	\$29,959	-\$22	\$70	\$48	-0.1%	0.2%	0.1%
Eighth Decile	\$38,898	-\$1	\$81	\$80	0.0%	0.2%	0.2%
Ninth Decile	\$51,375	-\$5	\$87	\$82	0.0%	0.2%	0.2%
Top Decile	\$99,774	-\$42	\$89	\$47	0.0%	0.1%	0.1%
<b>Aggregate</b>	<b>\$33,638</b>	<b>-\$251</b>	<b>\$10</b>	<b>-\$261</b>	<b>-0.7%</b>	<b>0.0%</b>	<b>-0.7%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

Assuming that BIG affects labour supply as summarized in Table 6, employment earnings will necessarily change as well. By using changes in income due to the income and

substitution effects, Table 7 reports how much, on average, employment income will change as a result of BIG introduction. As the final row indicates, overall earnings decrease on average by \$425, or 0.89%. In addition, once individuals adjust work intensity, reduced earnings will inevitably result in higher BIG benefits. As the last three columns of Table 7 show, the average value of BIG will increase substantially for those in the bottom decile, whose earnings decrease the most in response to the basic income.

Finally, the changes in BIG entitlements and tax liabilities as a result of labour supply changes will reduce the total cost of the program by \$3.25 billion (\$98.65 billion to \$95.40 billion).<sup>16</sup> Recall from Table 2 that in the absence of behavioural responses, implementing the federal BIG would result in a surplus of \$8.09 billion. This surplus will increase as a result of behavioural responses, leaving a surplus after Stage One of about \$11.34 billion. This is available to finance any deficit arising from Stage Two below.

**Table 7:** The Impact of Changed Earnings on Subsequent BIG Received by Family Net Income Decile, 2015

	Average Change in Earnings	Average Value of BIG		
		Pre-Labour Supply Effects	Post-Labour Supply Effects	Difference
Bottom Decile	-\$146	\$11,019	\$13,528	\$2,509
Second Decile	-\$476	\$11,224	\$11,036	-\$188
Third Decile	-\$595	\$9,615	\$8,631	-\$984
Fourth Decile	-\$765	\$6,111	\$5,285	-\$826
Middle Decile	-\$799	\$3,091	\$2,119	-\$972
Sixth Decile	-\$364	\$678	\$309	-\$369
Seventh Decile	\$47	\$75	\$0	-\$75
Eighth Decile	\$80	\$0	\$0	\$0
Ninth Decile	\$82	\$0	\$0	\$0
Top Decile	\$47	\$0	\$0	\$0
<b>Aggregate</b>	<b>-\$241</b>	<b>\$3,358</b>	<b>\$3,248</b>	<b>-\$110</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

The labour supply effects summarized in Table 6 are based on estimates of changes in labour supply along the intensive margin, that is, variations in hours of work. For many

<sup>16</sup>Calculation by authors using the SPSSD/M.

workers, the relevant labour supply decision is an extensive-margin one. This includes especially the decision to participate in the labour market, but also decisions as to what type of job to seek, and what sort of activities to pursue if one chooses not to participate. For example, non-participation can be socially productive if it is used to improve one's skills or to spend time raising children. The relevant tax rate from this perspective is the participation tax rate emphasized first by Diamond (1980) and then Saez (2002). The participation tax rate measures the net additional tax payment incurred or transfer lost when an individual moves from unemployment to employment. In making this calculation, an assumption must be made about what income would be earned if a job were accepted. Such calculations are beyond the scope of this paper. The impact of a BIG on participation in the labour market is a serious consideration that does requires further attention. As mentioned earlier, one way to encourage participation might be to set the tax-back rate very low for the first amount of income earned, and increase it for high incomes.

## **5.2 Stage Two: A National BIG**

In Stage Two, provinces would be invited to harmonize their transfer systems with the federal BIG. Those choosing to harmonize would take two steps. First, they would eliminate their welfare and disability transfers, and previous social assistance recipients would receive the standard federal BIG. Adjustments would have to be made to the federal-provincial fiscal arrangements system, especially the CST and the division of tax room, given the savings in social program spending to the provinces. Second, participating provinces would eliminate their NRTCs and RTCs to harmonize their income tax systems with the federal government's, and they would choose their own provincial BIGs to supplement the federal BIG. The provinces could choose their own BIG levels, but would be required to harmonize their tax-back rates.

The quantitative impact of Stage Two depends on provincial choices, including whether to harmonize, and if so, what provincial BIG to adopt. We can consider two extreme scenarios. In one extreme, no province harmonizes in which case, the results of Stage One apply. In the other extreme, all provinces fully harmonize by choosing a provincial BIG of \$5,478 (the national BIG less the basic federal BIG of \$14,322) so that the national BIG of \$20,000 is achieved. Of course, this is adjusted by the square-root adult family equivalent scales.

Tables 8 and 9 indicate the additional distributional effects of all the provinces choosing a fully harmonized BIG in Stage Two. Family disposable income increases in Stage Two for individuals in the bottom six deciles of the family net income distribution, and decreases for those above. The combination of Stages One and Two causes the bottom half of the family net income distribution to gain at the expense of the top half. In absolute terms, the gains decline monotonically with income group. Those at the bottom gain substantially in percentage terms, but they are starting from a low base. For nuclear family types in the bottom decile, non-elderly childless families and the disabled gain most, while parents and the elderly gain least. This reflects the fact that the latter groups do well from OAS/GIS and the CCB under the existing system. Table 10 indicates the effect of the combination of Stages One and Two on the poverty rate and the Gini coefficient for nuclear family types. The rate of poverty and the Gini Coefficient both decrease for all family types except elderly couple. The fall in the overall poverty rate (73.11%) and in the Gini Coefficient (17.42%) are substantial.

The additional cost of the program in Stage Two, assuming no labour supply changes, would be \$64.19 billion (from \$98.65 to \$162.84 billion), but additional revenues would be obtained from the elimination of provincial tax credits as well as the elimination of provincial welfare and disability systems. A budget deficit of \$0.59 billion would be created. Also note that in 2015-16, the federal government transferred \$12.96 billion to provinces through the CST. It would have to be determined how much, if at all, CST payments would decrease if all provinces chose to harmonize with BIG, but this represents an additional source of financing for the Stage Two basic income.

Table 11 shows that the combination of Stages One and Two causes labour supply, and therefore earnings, to fall in the bottom seven deciles, especially in the middle deciles. Earnings rise moderately in the top three deciles, so overall earnings fall by only \$492, or 1.5%. This is entirely due to the substitution effect since the income effect is zero on average. The change in labour supply induces changes in BIG expenditures as well as changes in income tax revenues. Overall, the reduction in labour supply causes the cost of the national BIG reform to rise to from \$162.84 billion to \$167.69 billion, resulting in an overall budget surplus of \$5.44 billion. This is the additional amount of revenues that would have to be raised to finance the National BIG, and is relatively modest.

**Table 8:** Impact on Family Disposable Income by Family Net Income Decile, 2015

	Average BIG	Average Family Income (Pre-BIG)	Average Family Disposable Income		Overall Change in Disposable Income	
			Stage 1	Stage 2	(\$)	(%)
Bottom Decile	\$20,353	\$8,868	\$19,422	\$23,690	\$14,822	167.14%
Second Decile	\$18,054	\$14,709	\$21,334	\$25,578	\$10,869	73.89%
Third Decile	\$15,504	\$21,308	\$25,263	\$28,623	\$7,315	34.33%
Fourth Decile	\$12,540	\$28,253	\$29,370	\$32,581	\$4,328	15.32%
Middle Decile	\$8,420	\$36,123	\$33,792	\$36,151	\$28	0.08%
Sixth Decile	\$3,569	\$45,254	\$40,628	\$41,085	-\$4,169	-9.21%
Seventh Decile	\$712	\$55,474	\$50,151	\$48,486	-\$6,988	-12.60%
Eighth Decile	\$0	\$71,013	\$65,604	\$63,125	-\$7,888	-11.11%
Ninth Decile	\$0	\$92,725	\$87,427	\$84,764	-\$7,961	-8.59%
Top Decile	\$0	\$175,961	\$171,009	\$166,479	-\$9,482	-5.39%
<b>Aggregate</b>	<b>\$7,912</b>	<b>\$54,982</b>	<b>\$54,411</b>	<b>\$55,066</b>	<b>\$84</b>	<b>0.15%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

**Table 9:** Average Impact on Family Disposable Income for Nuclear Families in the Bottom Decile, 2015

	Average BIG	Average Family Income (Pre-BIG)	Average Family Disposable Income		Overall Change in Disposable Income	
			Stage 1	Stage 2	(\$)	(%)
Single Parent	\$19,871	\$24,869	\$29,680	\$35,169	\$10,300	41.42%
Two Parent	\$27,515	\$28,188	\$43,384	\$45,675	\$17,487	62.04%
Non-Elderly Single	\$19,772	\$5,830	\$16,855	\$21,505	\$15,675	268.87%
Non-Elderly Couple	\$27,874	\$14,011	\$30,359	\$33,135	\$19,124	136.49%
Elderly Single	\$19,453	\$17,700	\$20,731	\$21,297	\$3,597	20.32%
Elderly Couple	\$27,029	\$20,457	\$34,623	\$30,130	\$9,673	47.28%
Disabled Persons	\$20,654	\$12,843	\$21,532	\$24,635	\$11,792	91.82%
<b>Aggregate</b>	<b>\$20,353</b>	<b>\$8,868</b>	<b>\$19,422</b>	<b>\$23,690</b>	<b>\$14,822</b>	<b>167.14%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

**Table 10:** Impact of National BIG on Rate and Depth of Poverty for Nuclear Families, 2015

	Rate of Poverty			Gini Coefficient		
	Pre-BIG	Post-BIG	Impact (%)	Pre-BIG	Post-BIG	Impact (%)
Single Parent	15.9%	0.1%	-99.37%	.3076	.2389	-23.96%
Two Parent	4.9%	0.6%	-87.76%	.3059	.2992	-2.19%
Elderly Single	10.3%	5.5%	-49.60%	.2919	.2505	-14.18%
Elderly Couple	2.3%	6.1%	165.22%	.3364	.3872	15.10%
Non-Elderly Single	26.0%	4.9%	-81.15%	.4714	.2630	-44.21%
Non-Elderly Couple	4.3%	0.4%	-90.70%	.3570	.3497	-2.04%
Disabled Persons	16.4%	5.2%	-68.29%	.4221	.3554	-15.80%
<b>Aggregate</b>	<b>11.9%</b>	<b>3.2%</b>	<b>-73.11%</b>	<b>.4603</b>	<b>.3801</b>	<b>-17.42%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

**Table 11:** Substitution and Income Effects of Individual Tax-Filers by Family Net Income Decile, 2015

	Average	Average Dollar Value			Percent of Employment Earnings		
	Earnings	Substitution	Income	Total	Substitution	Income	Total
	Per Adult	Effect	Effect	Effect	Effect	Effect	Effect
Bottom Decile	\$594	-\$51	-\$143	-\$194	-8.5%	-24.0%	-32.5%
Second Decile	\$4,575	-\$329	-\$308	-\$637	-7.2%	-6.7%	-13.9%
Third Decile	\$7,868	-\$573	-\$216	-\$789	-7.3%	-2.7%	-10.0%
Fourth Decile	\$12,015	-\$877	-\$146	-\$1,023	-7.3%	-1.2%	-8.5%
Middle Decile	\$16,598	-\$1,229	-\$66	-\$1,295	-7.4%	-0.4%	-7.8%
Sixth Decile	\$23,355	-\$1,301	\$26	-\$1,275	-5.6%	0.1%	-5.5%
Seventh Decile	\$29,959	-\$818	\$98	-\$720	-2.7%	0.3%	-2.4%
Eighth Decile	\$38,898	-\$1	\$131	\$130	0.0%	0.3%	0.3%
Ninth Decile	\$51,375	-\$6	\$139	\$134	0.0%	0.3%	0.3%
Top Decile	\$99,774	-\$42	\$158	\$116	0.0%	0.2%	0.2%
<b>Total</b>	<b>\$33,638</b>	<b>-\$489</b>	<b>-\$3</b>	<b>-\$492</b>	<b>-1.5%</b>	<b>0.0%</b>	<b>-1.5%</b>

*Source:* Statistics Canada, Social Policy Simulation Database and Model (SPSD/M). Version 22.1. Tabulations by authors.

## 6 Some Difficulties with Implementing a BIG in Canada

Income-tested transfers administered through the income tax system are not without their own design problems, and this would also be the case with a BIG. One important concern is their responsiveness to changing circumstances of recipients. The main beneficiaries of a BIG are those in precarious income positions whose circumstances can change on short notice. These persons typically have limited ability to self-insure through personal savings and must rely on the goodwill of others, especially family and friends to respond to difficult times. One of the main benefits of a BIG is to insure persons against precipitous changes in their income, but to be effective the response must be timely. Existing refundable tax credit schemes are recalculated each July to take account of the previous years tax return. This may not be adequate for persons whose circumstances can change frequently and at short notice. It is not clear that a system that is based on reported income for tax purposes can be any more responsive than that. The only alternative would require application for a revision to transfer entitlements before tax returns are filed, but this would entail problems associated with bureaucratic discretion as in the current welfare/disability system. Moreover, an asymmetry would be created between those whose incomes have fallen and those whose incomes have risen. This is a problem that warrants further study.

More generally, there are a number of basic design issues that would have to be settled with the implementation of a BIG, many of which have been referred to above. The level of the basic income guarantee would have to be chosen, as well as how if at all it should vary by personal circumstances like family size, province of residence and size of community. Poverty measures like LICO differ in these dimensions. A case can be made for a fairly uniform BIG. This would simplify the system and avoid inevitable inequities, such as the ones that arise in the EI system. Existing federal income tested transfers like OAS/GIS and refundable tax credits are not differentiated. In the two-tier federal-provincial scheme as we propose, provinces could take local conditions into account in their choice of provincial supplement.

In addition to the guarantee level, tax-back rates would have to be chosen. There is a trade-off involving the cost of a BIG program, the extent to which it is targeted and possible incentive effects. From a cost-effective point of view, a BIG should have a steep enough tax-back rate such that it disappears at a reasonable income level, while assuring a large enough BIG guarantee. Existing federal programs have tax-back rates that are low

enough that benefits are not phased out until middle or even upper middle income levels are reached. A problem emphasized by Kesselman (2014) is that a BIG with a steep tax-back rate on top of the personal income tax system tax rates (and possibly GST/HST rates) can create large implicit tax rates, especially since the tax-back rate on a BIG is likely to be higher than income tax rates. In principle, the BIG could be fully harmonized with the personal income tax so that a single set of marginal tax rates is chosen (as in the optimal income tax literature). That does not relax concerns about steep marginal tax rates, but makes them more transparent.

Concern with labour market responses of BIG recipients typically focuses on marginal tax rates and how they influence work intensity. A potentially more serious concern is the effect of BIG on labour market participation, which is the margin of behaviour that recipients may have more control over. For many workers, the decision to participate in the labour market is as important as the amount of work they do. Participation will be discouraged to the extent that workers lose BIG entitlements when they accept work. In addition, the federal BIG introduced in Stage One can also affect participation in social assistance as well as labour market behaviour of those on EI. The incentive of firms to lay off workers in a downturn might also be affected. All these incentive effects can be taken into account in designing the BIG. The recent optimal income tax literature has suggested that participation tax rates at low-income levels should be as low as possible, which suggests that tax-back rates should be relatively low to start with and rise after income reaches some threshold level.

The more serious problem is how to implement a BIG when the federal government and the provinces assume responsibility for differing segments of the low-income population.<sup>17</sup> To move to nationwide BIG would require an unprecedented level of cooperation between the two levels of government. Reform is more likely if one level of government acts unilaterally, and that necessarily implies the federal government if the BIG is to be comprehensive. For the provincial level to move first, at most a small number would be involved (maybe as small as one) since inter-provincial cooperation is even less likely than federal-provincial cooperation. Moreover it would be difficult for the provinces acting alone to achieve a broad-based BIG covering all persons given their budgetary constraints as well as fiscal

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<sup>17</sup>For simplicity, we omit consideration of the Territories, although they too would have to be part of a major transfer reform. In principle, their participation would parallel that of the provinces in the reform process we discussed above. The case of the First Nations is more difficult as we discussed earlier.

competition pressures. A provincial initiative could serve as a policy innovation that could be emulated by others, as in the case of Medicare in Saskatchewan. But even in that case, inducing all provinces to follow would likely require the pro-active encouragement of the federal government with financial incentives. Unlike Medicare, programs of transfers to low-income persons is well within the legislative competence of the federal government, and in the case of a BIG the arguments for a nationwide program are compelling.

## 7 Concluding Comments

There are some general lessons that can be taken away from our analysis and illustrative calculations. First, it is feasible to implement a national BIG scheme in a federal setting where the federal government and the provinces have both a common interest in redistributive goals and the policy instruments to achieve them. We have suggested adopting a system analogous to existing federal-provincial tax harmonization to deliver joint federal and provincial BIG programs through the income tax system. Second, we have argued that it is feasible to finance a national BIG by eliminating existing refundable and non-refundable tax credits and using the proceeds as a sole source of funding.

As a final lesson, however, our simulations show that even if we insist on a revenue-neutral policy reform to a national BIG, the tax-back rate need not be excessive. In our example with a single tax-back rate of 30%, the combined effective marginal tax rate for those at the bottom of the income distribution is of the order of 50% when federal and provincial tax rates are taken into account. This is not out of line with what one finds in the optimal income tax literature (e.g., Tuomala, 2016). Reducing the tax-back rate further, while maintaining the size of the basic guarantee, would be feasible if increases in general tax revenues are used to finance it. More generally, adopting more complex tax-back rate structures can mitigate incentive effects at the bottom of the income distribution, particularly those that affect labour market participation.

There are some additional issues worth exploring in future research. First, the labour supply estimates we use do not include family labour supply decisions. That is, they fail to capture joint decision-making that may occur in the household. Second, we do not perform a sensitivity analysis over different tax back rates or labour supply elasticities. For example, we could evaluate a basic income that is not taxed back until after some specified level of

income. Such a design would reduce employment participation disincentives. Alternatively, we could examine a BIG that is similar in design to the WITB, which has both phase-in and phase-out rates. Third, there are many other behavioural responses that could be considered, such as the effect of BIG on savings and participation decisions. Finally, this paper does not consider how a basic income would be administered to First Nation members on reserves, which have their own unique political systems.

## **Glossary of Terms**

BIG: Basic Income Guarantee

CCB: Canada Child Benefit

CCP: Canada Pension Plan

CHT: Canada Health Transfer

CRA: Canada Revenue Agency

CST: Canada Social Transfer

EI: Employment Insurance

EMTR: Effective Marginal Tax Rate

GIS: Guaranteed Income Supplement

GST: Goods and Services Tax

HST: Harmonized Sales Tax

LICO: Low-Income Cutoff

LIM: Low-Income Measure

MBM: Market-Basket Measure

NBIG: National Basic Income Guarantee

NRTC: Non-Refundable Tax Credit

OAS: Old Age Security

QPP: Quebec Pension Plan

QST: Quebec Sales Tax

RTC: Refundable Tax Credit

SPSD/M: Social Policy Simulation Database and Model

TCA: Tax Collection Agreement

WITB: Working Income Tax Benefit

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